



an ISO 9001:2008 Registered Company

1979-81 CAMARO

w/o FACTORY AIR

561180

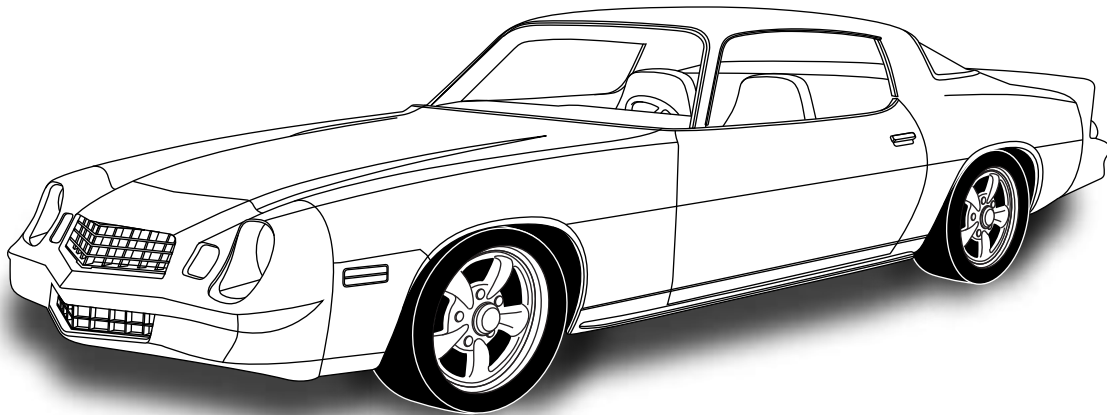




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EVAPORATOR KIT PACKING LIST

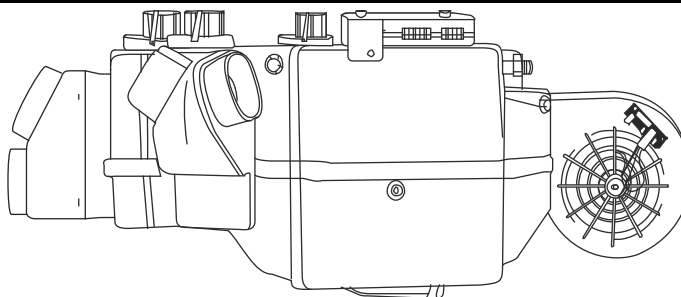
EVAPORATOR KIT
561180

NO.	QTY.	PART NO.	DESCRIPTION
1.	1	744004-VUE	GEN IV 4 VENT EVAP. SUB CASE w/ 204 ECU
2.	1	781173	1979-81 CAMARO w/o AC ACC. KIT

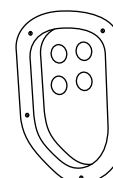
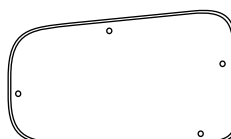
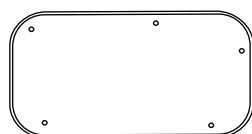
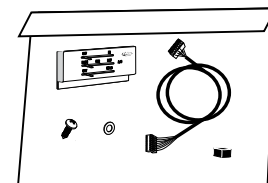
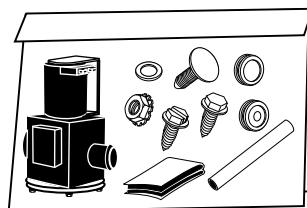
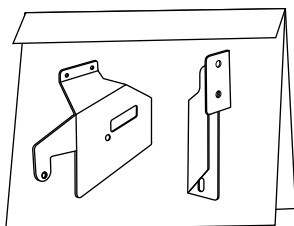
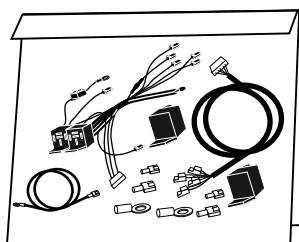
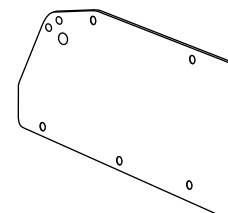
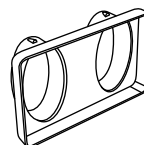
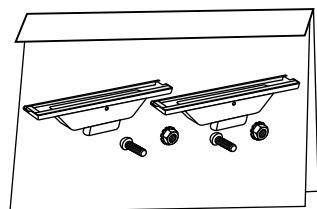
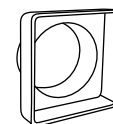
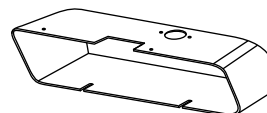
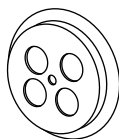
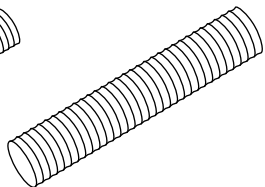
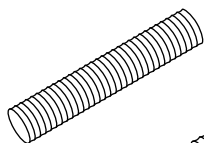
**** BEFORE BEGINNING INSTALLATION OPEN ALL PACKAGES AND CHECK CONTENTS OF SHIPMENT. PLEASE REPORT ANY SHORTAGES DIRECTLY TO VINTAGE AIR WITHIN 15 DAYS. AFTER 15 DAYS, VINTAGE AIR WILL NOT BE RESPONSIBLE FOR MISSING OR DAMAGED ITEMS.**

①

**GEN IV 4 VENT
EVAP. SUB CASE
w/ 204 ECU
744004-VUE**



②



**ACCESSORY KIT
781173**

**NOTE: IMAGES MAY NOT DEPICT ACTUAL PARTS AND QUANTITIES.
REFER TO PACKING LIST FOR ACTUAL PARTS AND QUANTITIES.**

3



IMPORTANT NOTICE-PLEASE READ

FOR MAXIMUM SYSTEM PERFORMANCE VINTAGE AIR RECOMMENDS THE FOLLOWING:

THIS KIT DOES NOT CONTAIN HEATER HOSE. YOU MUST PURCHASE 12 FEET OF 5/8" DIA. HEATER HOSE FROM VINTAGE AIR (31800-VUD) OR FROM YOUR LOCAL PARTS RETAILER

SAFETY SWITCHES:

YOUR VINTAGE AIR SYSTEM IS EQUIPPED WITH A BINARY PRESSURE SAFETY SWITCH. A BINARY SWITCH DISENGAGES THE COMPRESSOR CLUTCH IN CASE OF EXTREME LOW PRESSURE CONDITION (REFRIGERANT LOSS) OR EXCESSIVELY HIGH HEAD PRESSURE (406 PSI), TO PREVENT COMPRESSOR DAMAGE OR HOSE RUPTURE. A TRINARY SWITCH COMBINES HI/LO PRESSURE PROTECTION WITH AN ELECTRIC FAN OPERATION SIGNAL AT 254 PSI., AND MAY BE SUBSTITUTED FOR USE WITH ELECTRIC CONDENSER FANS. COMPRESSOR SAFETY SWITCHES ARE EXTREMELY IMPORTANT SINCE AN A/C SYSTEM RELIES ON REFRIGERANT TO CARRY LUBRICATION THROUGH THE SYSTEM.

SERVICE INFO:

ATTENTION: SYSTEM COMPONENTS: THE COMPRESSOR, EVAPORATOR, CONDENSER & DRIER ARE CAPPED. CAPS MAY BE UNDER PRESSURE WITH DRY NITROGEN; BE CAREFUL REMOVING CAPS. DO NOT REMOVE CAPS PRIOR TO INSTALLATION. REMOVING CAPS PRIOR TO INSTALLATION WILL CAUSE COMPONENTS TO COLLECT MOISTURE AND LEAD TO PREMATURE FAILURE AND REDUCED PERFORMANCE.

EVACUATE THE SYSTEM FOR 35-45 MINUTES WITH SYSTEM COMPONENTS (DRIER, COMPRESSOR, EVAPORATOR AND CONDENSER) AT A TEMPERATURE OF AT LEAST 85° F. ON A COOL DAY THE COMPONENTS CAN BE HEATED WITH A HEAT GUN OR BY RUNNING THE ENGINE WITH THE HEATER ON BEFORE EVACUATING. LEAK CHECK AND CHARGE TO SPECIFICATIONS.

**VINTAGE AIR SYSTEMS ARE DESIGNED TO OPERATE WITH R134a
REFRIGERANT ONLY! USE OF ANY OTHER REFRIGERANTS RISKS A DANGER OF FIRE
AND COULD DAMAGE EITHER YOUR AIR CONDITIONING SYSTEM OR YOUR VEHICLE.**

**USE OF ANY OTHER REFRIGERANTS WILL VOID ALL WARRANTIES OF
THE AIR CONDITIONING SYSTEM AND COMPONENTS. USE OF THE PROPER
TYPE AND AMOUNT OF REFRIGERANT IS CRITICAL TO PROPER SYSTEM
OPERATION. VINTAGE AIR RECOMMENDS OUR SYSTEMS BE CHARGED BY
WEIGHT WITH A QUALITY CHARGING STATION OR SCALE.**

REFRIGERANT CAPACITY FOR VINTAGE AIR SYSTEMS

(FOR OTHER SYSTEMS, CONSULT MANUFACTURER GUIDELINES)

134a SYSTEM

CHARGE WITH 1.8 lbs.
(1lbs. 12ozs) OF REFRIGERANT

LUBRICANT CAPACITIES: NEW COMPRESSOR - NO ADDITIONAL OIL NEEDED



IMPORTANT WIRING NOTICE-PLEASE READ

SOME VEHICLES MAY HAVE HAD SOME OR ALL OF THEIR RADIO INTERFERENCE CAPACITORS REMOVED. THERE SHOULD BE A CAPACITOR FOUND AT EACH OF THE FOLLOWING LOCATIONS:

- 1. ON THE POSITIVE TERMINAL OF THE IGNITION COIL**
- 2. IF THERE IS A GENERATOR, ON THE ARMATURE TERMINAL OF THE GENERATOR**
- 3. IF THERE IS A GENERATOR, ON THE BATTERY TERMINAL OF THE VOLTAGE REGULATOR**

MOST ALTERNATORS HAVE A CAPACITOR INSTALLED INTERNALLY TO ELIMINATE WHAT IS CALLED 'WHINING' AS THE ENGINE IS REVVED. IF WHINING IS HEARD IN THE RADIO, OR JUST TO BE EXTRA CAUTIOUS, A RADIO INTERFERENCE CAPACITOR CAN BE ADDED TO THE BATTERY TERMINAL OF THE ALTERNATOR.

IT IS ALSO IMPORTANT THAT THE BATTERY LEAD IS IN GOOD SHAPE AND THAT THE GROUND LEADS ARE NOT COMPROMISED. THERE SHOULD BE A HEAVY GROUND FROM THE BATTERY TO THE ENGINE BLOCK, AND ADDITIONAL GROUNDS TO THE BODY AND TO THE CHASSIS.

IF THESE PRECAUTIONS ARE NOT OBSERVED, IT IS POSSIBLE FOR VOLTAGE SPIKES TO BE PRESENT ON THE BATTERY LEADS. THESE SPIKES COME FROM IGNITION SYSTEMS, CHARGING SYSTEMS, AND FROM TURNING SOME OF THE VEHICLE'S OTHER SYSTEMS ON AND OFF. MODERN COMPUTER OPERATED EQUIPMENT CAN BE SENSITIVE TO VOLTAGE SPIKES ON THEIR POWER LEADS, WHICH CAN CAUSE UNEXPECTED RESETS, STRANGE BEHAVIOR, AND MAY ALSO CAUSE PERMANENT DAMAGE.

VINTAGE AIR STRIVES TO HARDEN THEIR PRODUCTS AGAINST THESE TYPES OF ELECTRICAL NOISE, BUT THERE IS A POINT WHERE A VEHICLE'S ELECTRICAL SYSTEM CAN BE DEGRADED SO MUCH THAT NOTHING CAN HELP.

RADIO INTERFERENCE CAPACITORS SHOULD BE AVAILABLE AT MOST AUTO & TRUCK PARTS SUPPLIERS. THEY TYPICALLY ARE CYLINDRICAL IN SHAPE, A LITTLE OVER AN INCH LONG, A LITTLE OVER A HALF INCH IN DIAMETER, THEY HAVE A SINGLE LEAD COMING FROM ONE END OF THE CYLINDER WITH A TERMINAL ON THE END OF THE WIRE, AND THEY WILL HAVE A MOUNTING CLIP WHICH IS SCREWED INTO A GOOD GROUND ON THE VEHICLE. THE SPECIFIC VALUE OF THE CAPACITANCE IS NOT TOO SIGNIFICANT, IN COMPARISON TO IGNITION CAPACITORS THAT ARE MATCHED WITH THE COIL TO REDUCE PITTING OF THE POINTS.

- CARE MUST BE TAKEN WHEN INSTALLING THE COMPRESSOR LEAD, NOT TO SHORT IT TO GROUND. THE COMPRESSOR LEAD MUST NOT BE CONNECTED TO A CONDENSER FAN OR ANY OTHER AUXILIARY DEVICE. SHORTING TO GROUND OR CONNECTING TO A CONDENSER FAN OR ANY OTHER AUXILIARY DEVICE WILL CAUSE SEVERE DAMAGE TO THE ECU.
- WHEN INSTALLING GROUND LEADS ON GEN IV SYSTEMS, THE BLOWER CONTROL GROUND AND ECU GROUND MUST BE CONNECTED DIRECTLY TO THE NEGATIVE BATTERY POST.
- THE HEATER CONTROL VALVE IS A NORMALLY OPEN VALVE. IT MUST BE CONNECTED TO THE ECU TO BLOCK WATER FLOW IN MAX AC MODE.



BEFORE STARTING THE INSTALLATION, CHECK THE FUNCTION OF THE VEHICLE (HORN, LIGHTS, ETC.) FOR PROPER OPERATIONS. STUDY THE INSTRUCTIONS, ILLUSTRATIONS, & DIAGRAMS.

ENGINE COMPARTMENT

REMOVE THE FOLLOWING:

- ☐ BATTERY AND BATTERY TRAY (RETAIN). SEE FIGURE 1.
- ☐ DRAIN RADIATOR
- ☐ HOOD LATCH ASSEMBLY (RETAIN) INCLUDING HOOD LATCH SUPPORT
- ☐ HEATER BLOWER MOTOR ASSEMBLY (DISCARD). TO REMOVE THE HEATER BLOWER MOTOR ASSEMBLY (UNDER HOOD) AND THE AIR DISTRIBUTION SYSTEM (UNDER DASH), REMOVE INNER FENDER. SEE FIGURE 3.
- ☐ OEM HEATER HOSES (DISCARD). SEE FIGURE 1.
- ☐ REMOVE OEM HEATER WIRING/VACUUM HARNESS MOLDED GROMMET. SEE FIGURE 1.

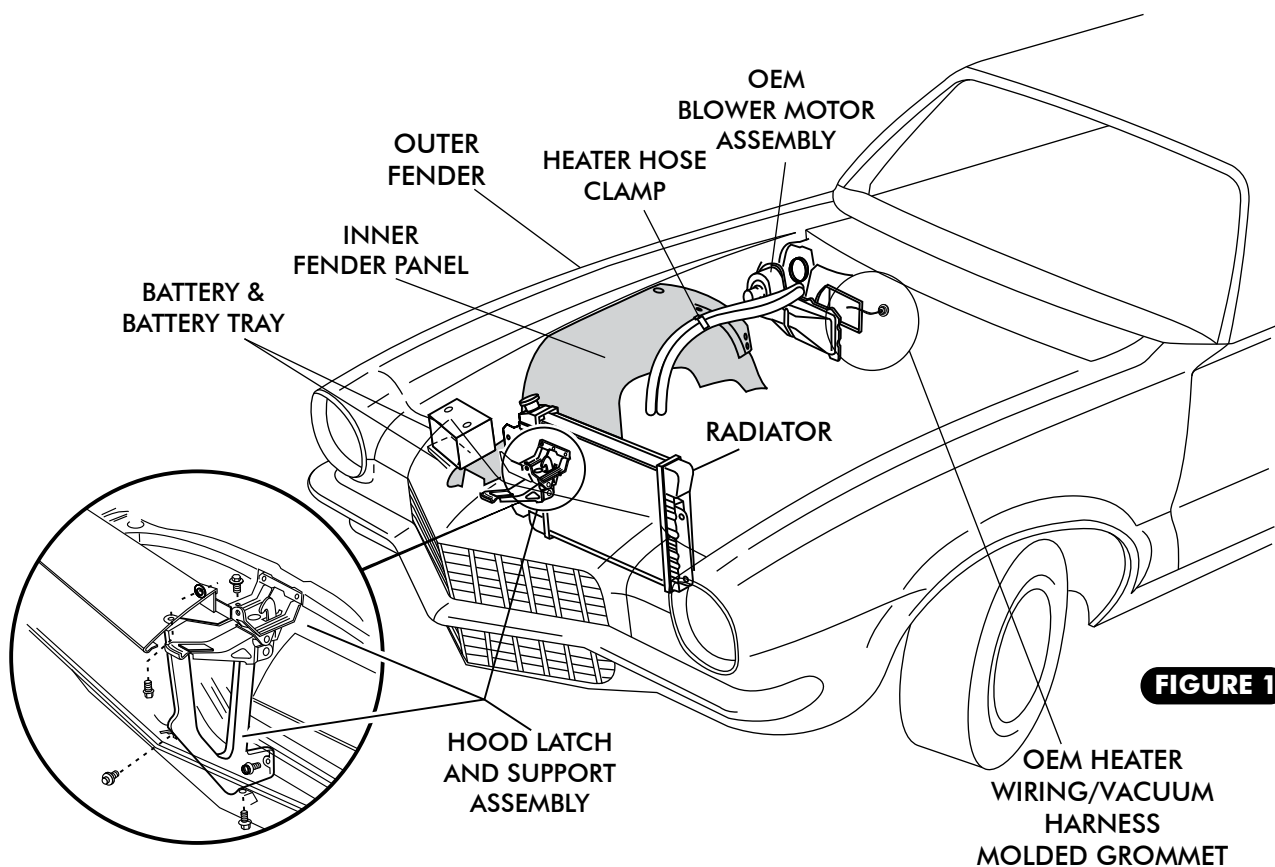


FIGURE 1

CONDENSER ASSEMBLY & INSTALLATION

- ☐ REFER TO SEPARATE INSTRUCTIONS INCLUDED WITH THE CONDENSER KIT TO INSTALL THE CONDENSER.
- ☐ BINARY SWITCH INSTALLATION (REFER TO CONDENSER INSTRUCTIONS)

COMPRESSOR & BRACKETS

- ☐ REFER TO SEPARATE INSTRUCTIONS INCLUDED WITH THE BRACKET KIT TO INSTALL THE COMPRESSOR BRACKET.

PULLEYS

- ☐ IN MOST INSTANCES THE BELT LENGTHS WILL REMAIN THE SAME.



PASSENGER COMPARTMENT

NOTE: REMOVAL OF DASHBOARD IS NOT REQUIRED TO INSTALL THE EVAPORATOR. VINTAGE AIR RECOMMENDS THAT YOU UTILIZE THE FACTORY SERVICE MANUAL WHEN YOU DISASSEMBLE AND REASSEMBLE THE DASHBOARD.

REMOVE THE FOLLOWING:

- ☐ GLOVE BOX DOOR. SEE FIGURE 3
- ☐ GLOVE BOX (DISCARD, RETAIN SCREWS). SEE FIGURE 2
- ☐ HEATER ASSEMBLY AND ALL RELATED DUCTING (DISCARD), RETAIN SCREWS. SEE FIGURE 3.
- ☐ DR/ PASS SIDE LOUVER OUTLETS (RETAIN). INSTRUMENT PANEL MUST BE REMOVED TO GET TO LEFT OUTLET, AND CONTROL PANEL. SEE FIGURE 3.
- ☐ CONTROL PANEL ASSEMBLY (DISCARD). SEE FIGURE 3. REFER TO CONTROL PANEL CONVERSION KIT INSTRUCTIONS FOR INSTALLATION OF CONTROLS.
- ☐ REMOVE PASS SIDE KICK PANEL (RETAIN). DISCONNECT PASS SIDE FRESH AIR CABLE FROM PANEL SEE FIGURE 3. DISCONNECT DR/ PASS CABLE ASTRO-VENTILATION DUCTING (DISCARD).
- ☐ REMOVE OEM DEFROST DUCT ASM.(DISCARD)

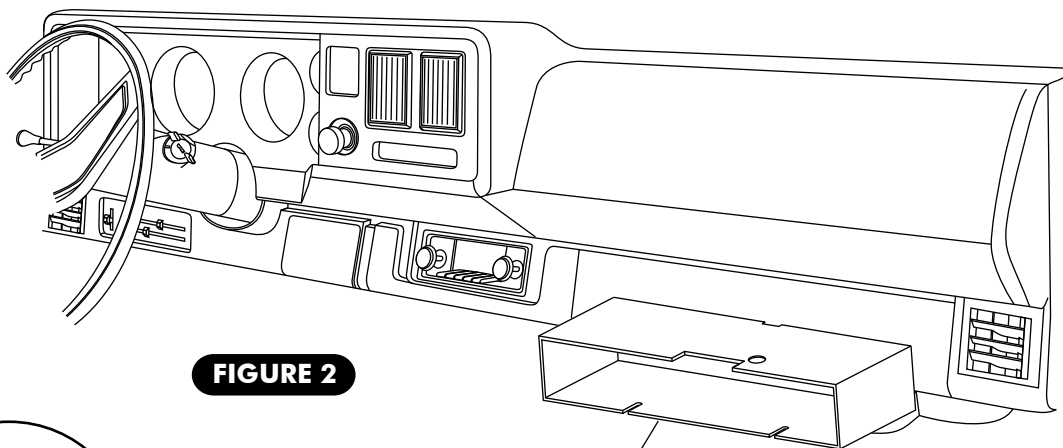


FIGURE 2

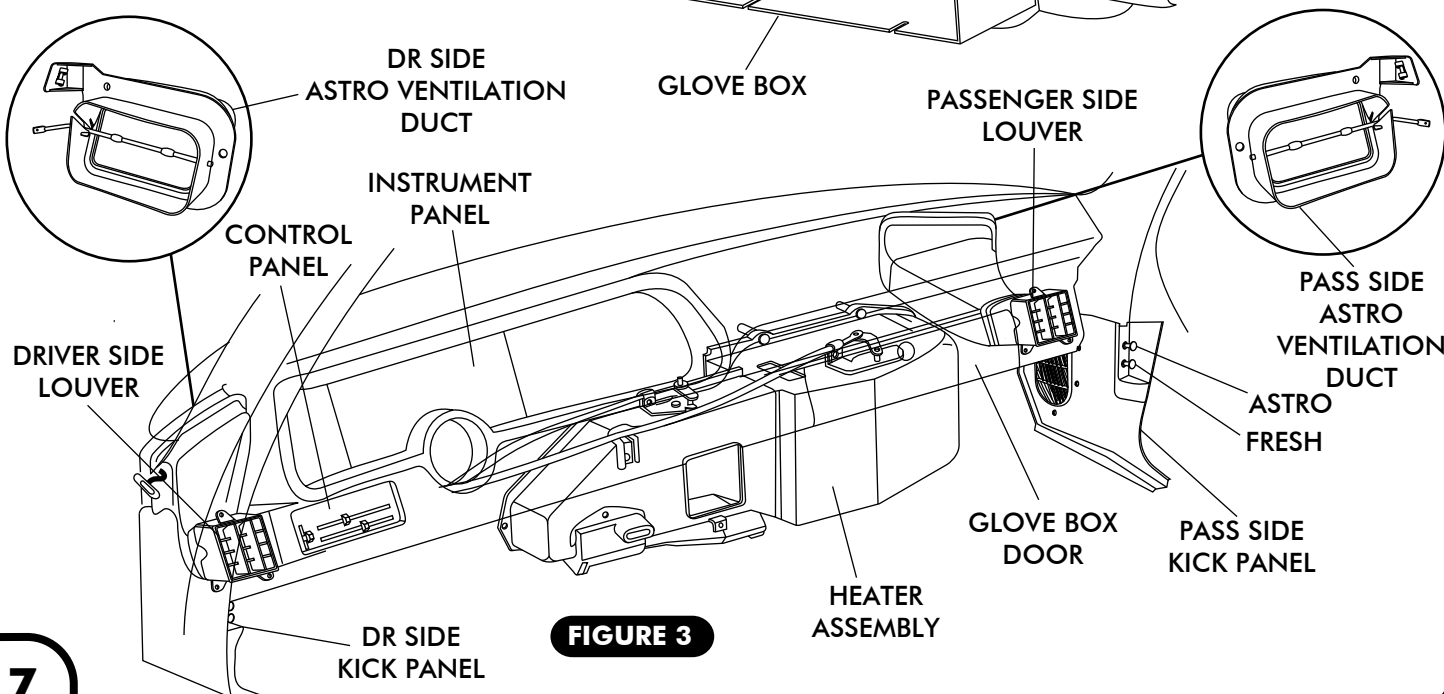


FIGURE 3



PASSENGER SIDE KICK PANEL MODIFICATION

- ☐ REMOVE KICK PANEL BY REMOVING THE (5) OEM SCREWS. DISCONNECT THE FRESH AIR DOOR FROM THE LEVER HOUSING. SEE FIGURE 4
- ☐ CUT KICK PANEL GRILLE USING TEMPLATE PROVIDED ON PAGE 24. SEE FIGURE 4a BELOW.
- ☐ ENLARGE OEM LEVER HOUSING HOLES TO 1/2". SEE FIGURE 4a
- ☐ INSTALL (2) 1/2" PLASTIC PLUGS IN OEM LEVER HOUSING HOLES. SEE FIGURE 4a BELOW.

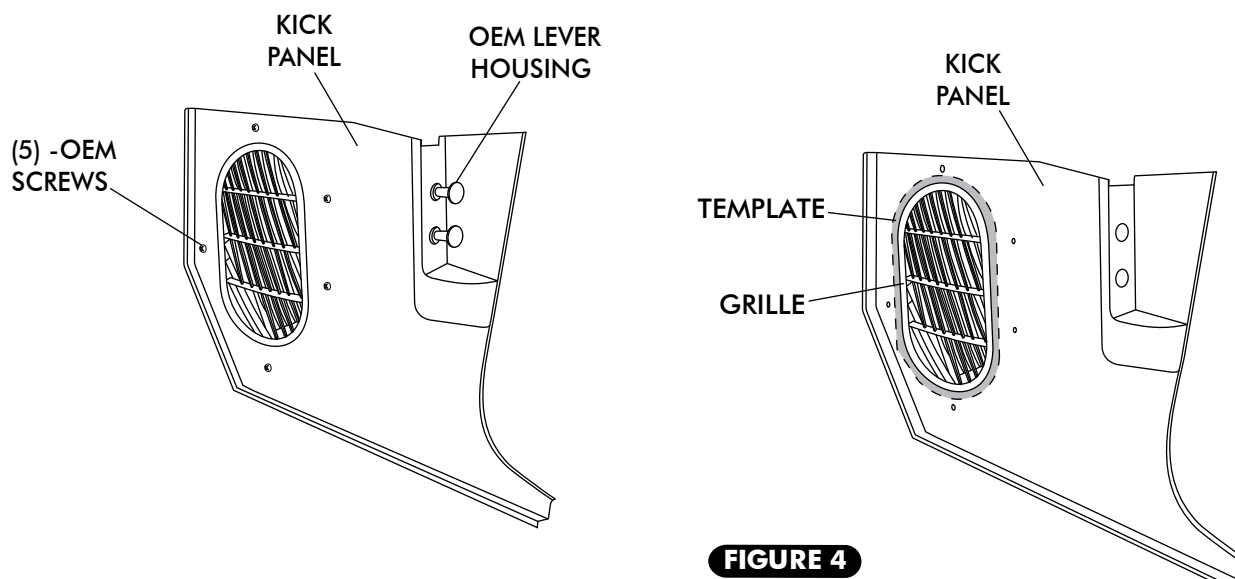


FIGURE 4

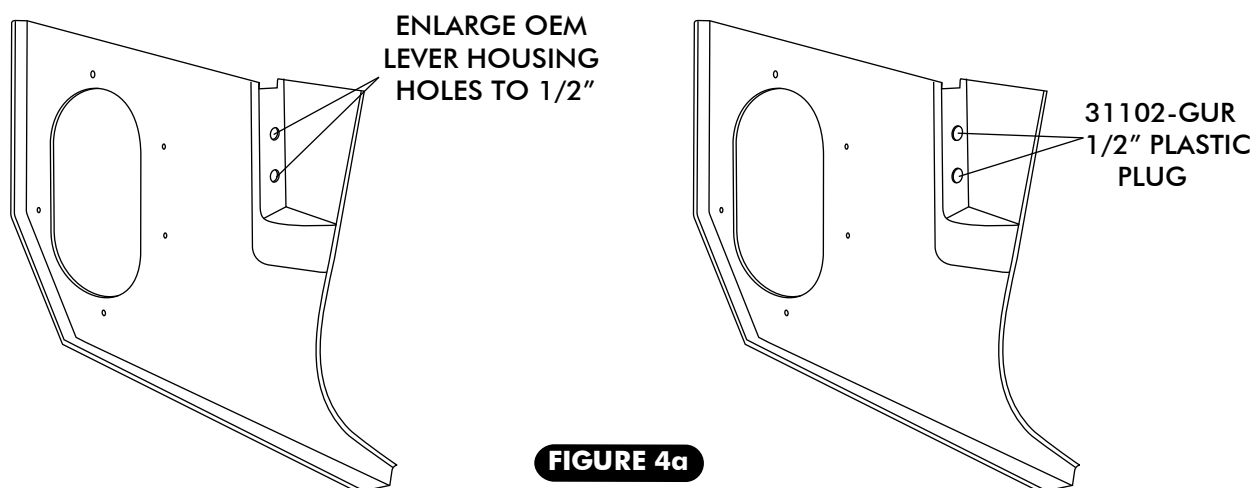


FIGURE 4a



DEFROST DUCT/FRESH AIR COVER INSTALLATION

- ☐ INSTALL THE DEFROST DUCTS UNDER DASH ON OEM DEFROST DUCT MOUNTING FLANGE AS SHOWN IN FIGURE 5 BELOW. SECURE USING 10/24 x 3/8" PAN HEAD SCREW AND 10/ 24 NUT w/ STARWASHER.
- ☐ APPLY A 1/4" BEAD OF SILICONE AROUND THE BACK SIDE OF THE DR/ PASS SIDE FRESH AIR CAPS AS SHOWN IN FIGURE 5a BELOW.
- ☐ INSTALL DR/ PASS SIDE FRESH AIR CAPS SECURE USING OEM SCREWS SEE FIGURE 5 BELOW.

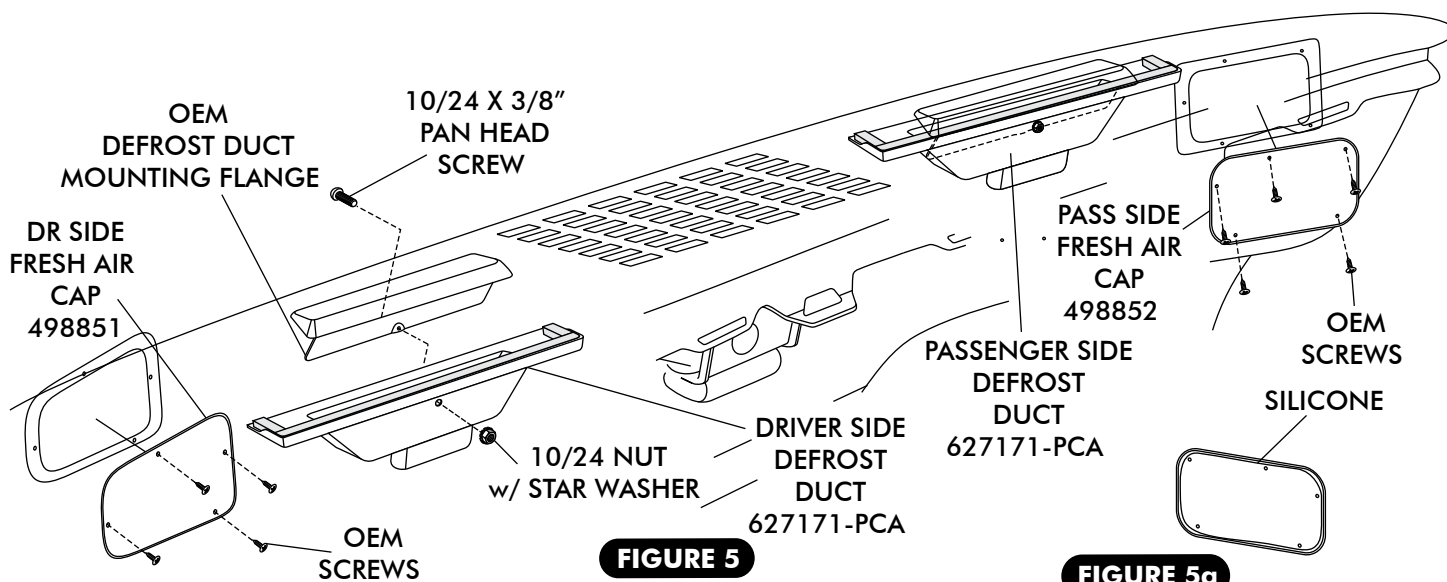
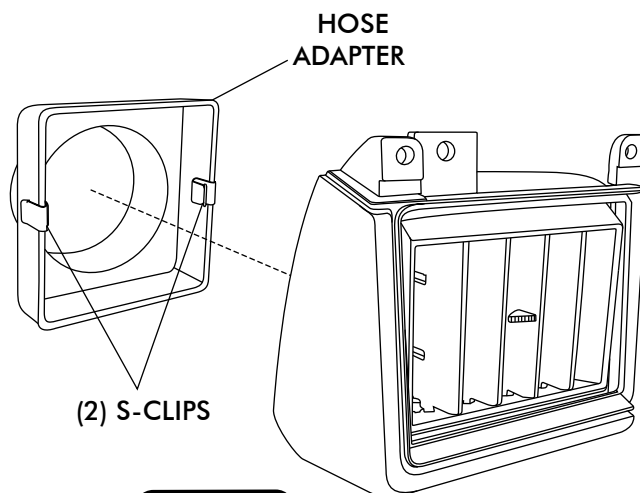


FIGURE 5a

HOSE ADAPTER INSTALLATION

- ☐ INSTALL (2) S-CLIPS ON HOSE ADAPTER AS SHOWN IN FIGURE 6 BELOW.
- ☐ INSTALL DRIVER & PASSENGER SIDE HOSE ADAPTERS ON OEM LOUVERS. SEE FIGURE 6 BELOW.





FRESH AIR COVER AND HEATER COVER BRACKET INSTALLATION

- ☐ INSTALL (4) GROMMETS IN FRESH AIR CAP. SEE FIGURE 7 BELOW
- ☐ APPLY A 1/4" BEAD OF SILICONE AROUND THE BACK SIDE OF THE FRESH AIR CAP AS SHOWN IN FIGURE 7.
- ☐ ATTACH FRESH AIR CAP TO FIREWALL USING A 1/4-20 x 1 1/2" BOLT AND WASHER, SEE FIGURE 7.
(NOTE: FRESH AIR CAP INSTALLS ON ENGINE SIDE OF FIREWALL.)
- ☐ INSTALL 1 1/4" PLUG IN FIREWALL. SEE FIGURE 7.

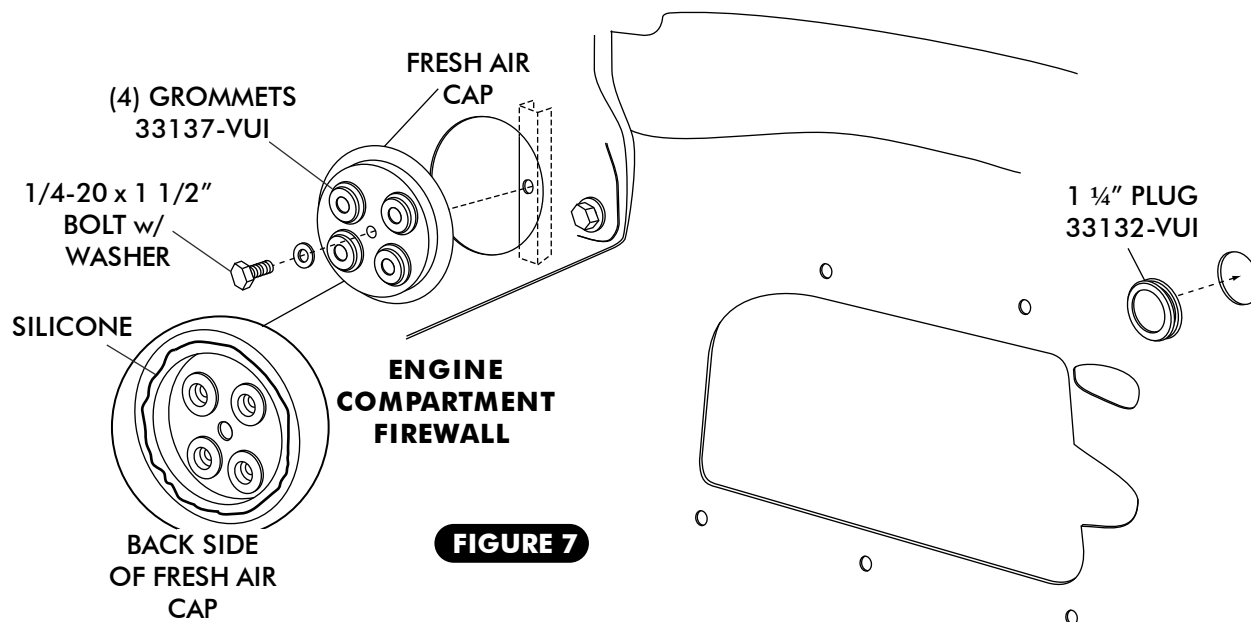


FIGURE 7

KICK PANEL FRESH AIR CAP INSTALLATION

- ☐ INSTALL (4) GROMMETS IN KICK PANEL FRESH AIR CAP, SEE FIGURE 8a BELOW.
- ☐ ROUTE A/C AND HEATER HOSE THROUGH FRESH AIR CAP AND KICK PANEL FRESH AIR CAP AS SHOWN IN FIGURE 8 AND 8b, BELOW.
- ☐ APPLY A 1/4" BEAD OF SILICONE AROUND THE BACK SIDE OF KICK PANEL FRESH AIR CAP AS SHOWN IN FIGURE 8a, BELOW.
- ☐ SECURE KICK PANEL FRESH AIR CAP USING OEM SCREWS, AS SHOWN IN FIGURE 8b BELOW.

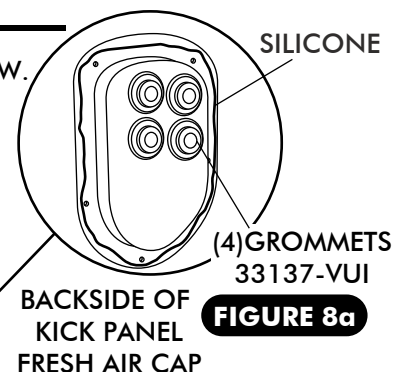


FIGURE 8a

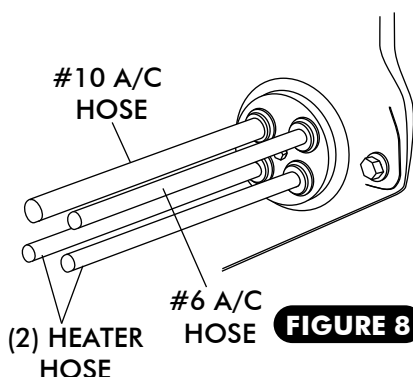


FIGURE 8

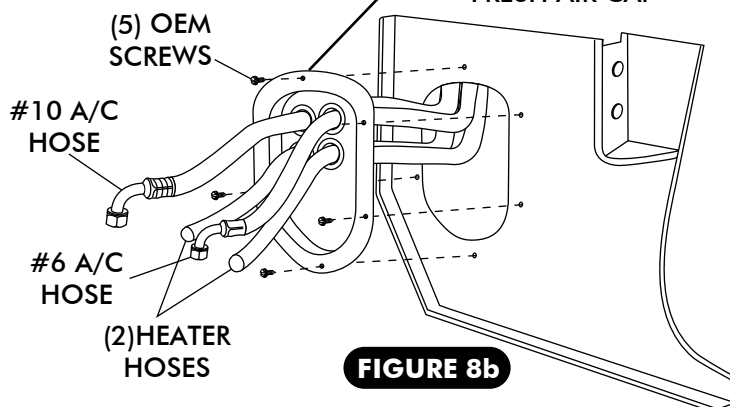
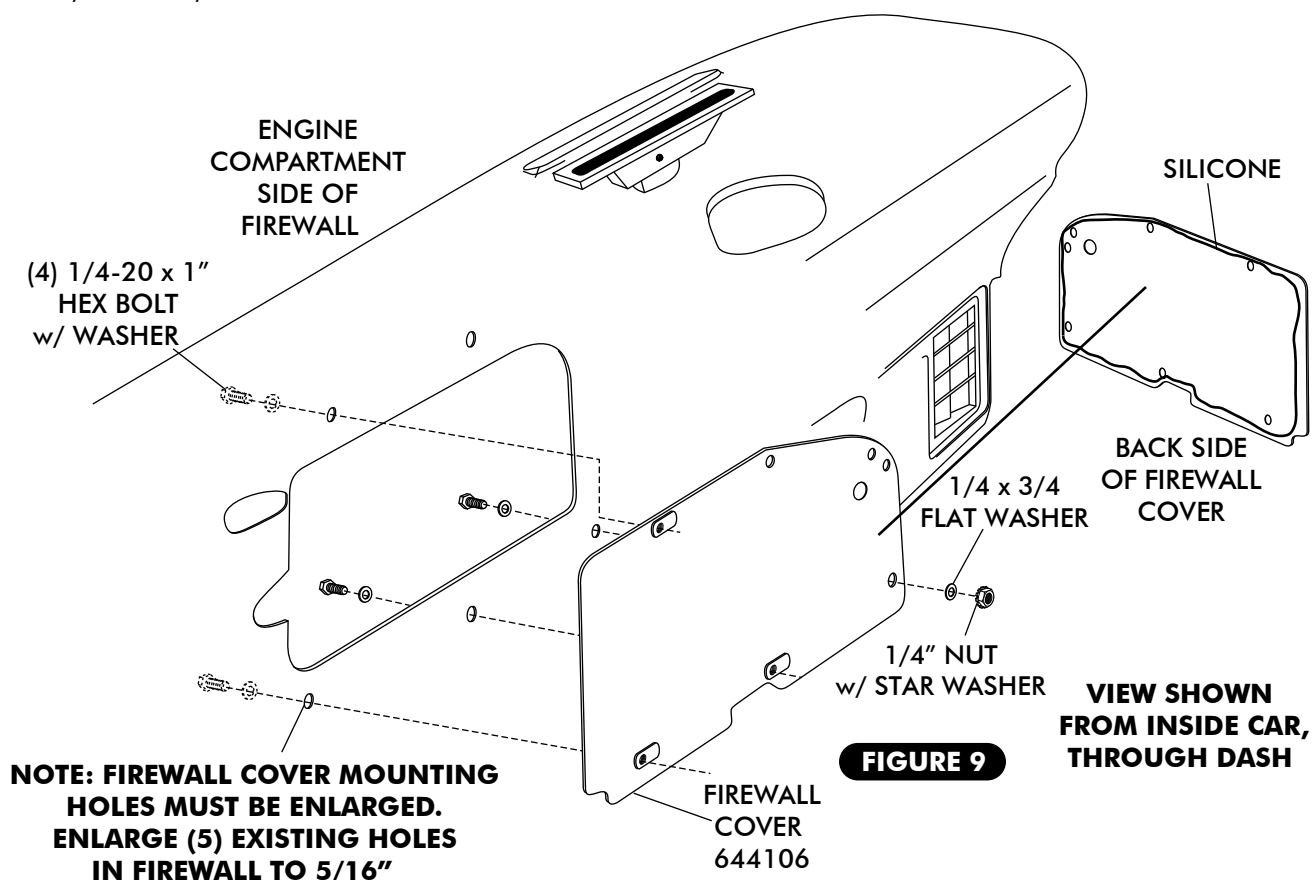


FIGURE 8b



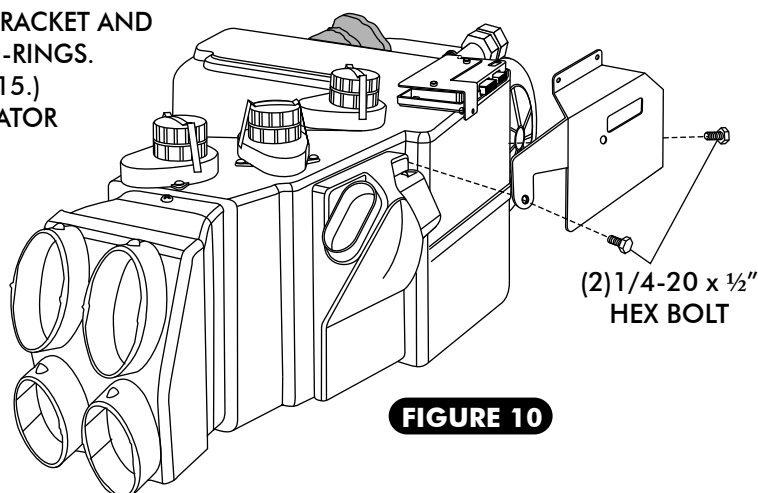
FIREWALL COVER INSTALLATION

- ENLARGE (5) OEM FIREWALL HOLES TO 5/16". SEE FIGURE 9 BELOW.
- APPLY A 1/4" BEAD OF SILICONE AROUND THE BACK SIDE OF THE FIREWALL COVER AS SHOWN IN FIGURE 9.
- FROM INSIDE THE CAR, INSTALL FIREWALL COVER ON FIREWALL SEE FIGURE 9, BELOW. FROM THE ENGINE COMPARTMENT SECURE FIREWALL COVER TO FIREWALL USING (4) 1/4-20 x 1", HEX BOLTS, (5) FLAT WASHERS AND 1/4" NUT w/ STAR WASHER. SEE FIGURE 9.



EVAPORATOR BRACKET AND AC & HEATER HOSE INSTALLATION

- ON A WORK BENCH, INSTALL EVAPORATOR REAR BRACKET AND AC & HEATER HOSE WITH PROPERLY LUBRICATED O-RINGS. (SEE FIGURE 11, PAGE 12, AND FIGURES 15, PAGE 15.)
- INSTALL FRONT MOUNTING BRACKET ON EVAPORATOR USING (2) 1/4-20 x 1/2" HEX BOLTS AND TIGHTEN AS SHOWN IN FIGURE 10 BELOW.





EVAPORATOR BRACKET AND HEATER FITTINGS INSTALLATION CONT. —

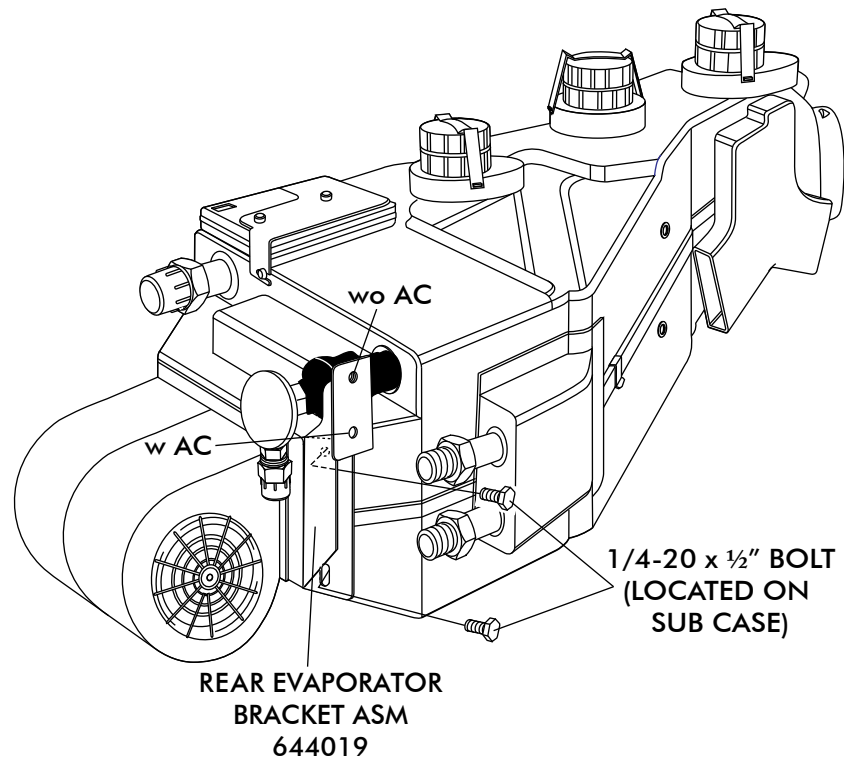
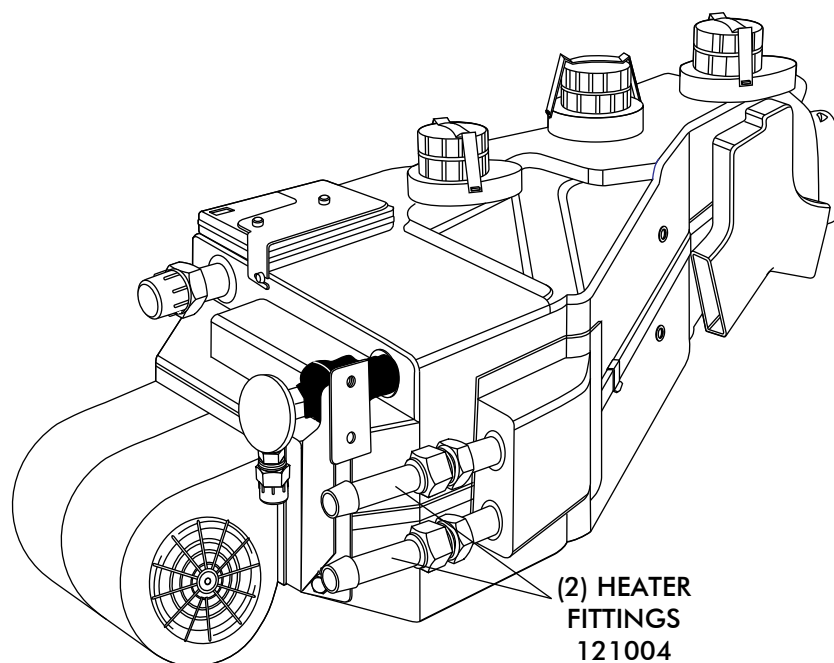


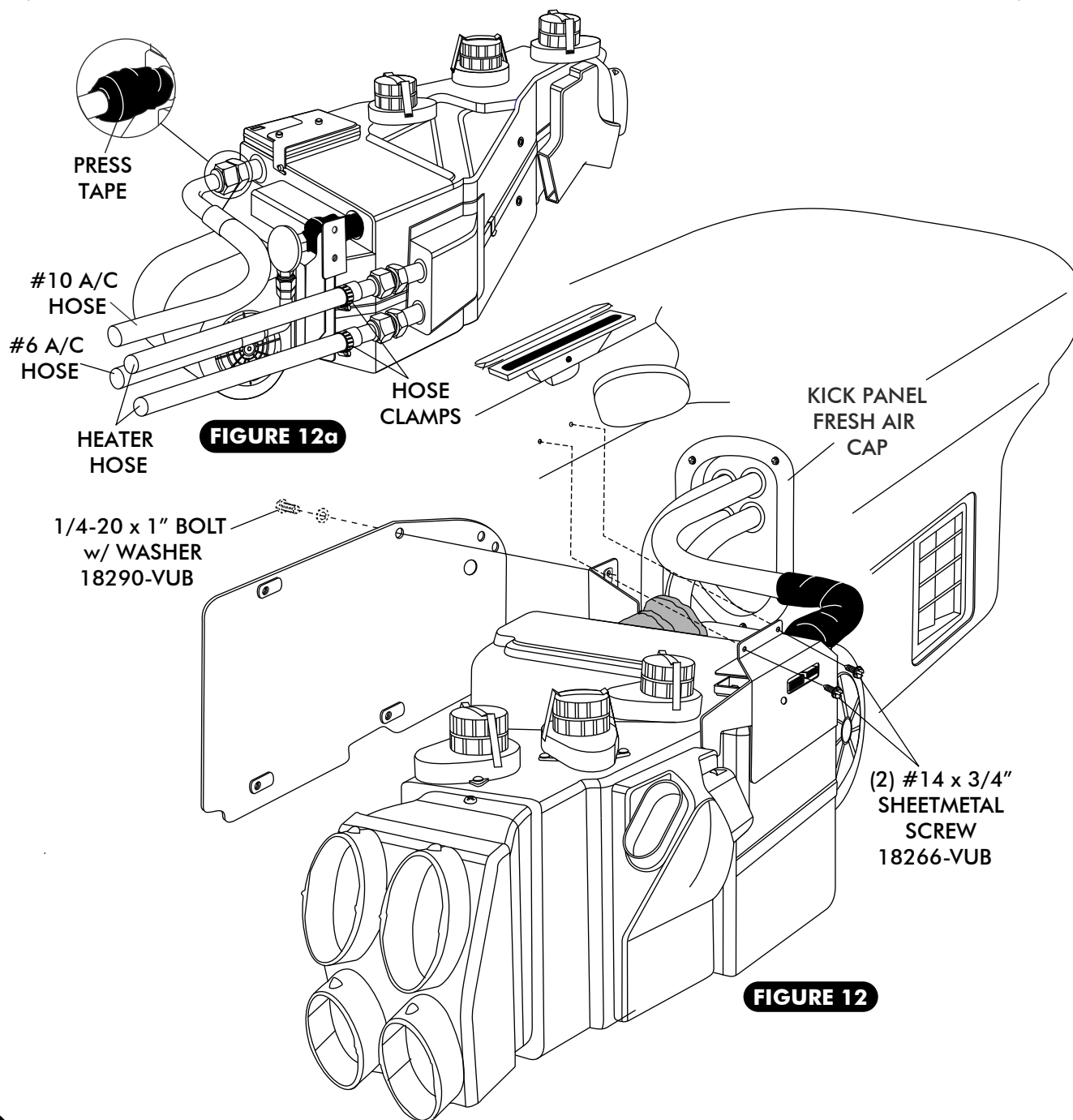
FIGURE 11





EVAPORATOR INSTALLATION

- ☐ LIFT EVAPORATOR UNIT UP UNDER THE DASHBOARD. SEE FIGURE 12. SECURE LOOSELY TO THE FIREWALL FROM THE ENGINE COMPARTMENT SIDE USING A 1/4-20 x 1" BOLT AND WASHER, SEE FIGURE 12 BELOW.
- ☐ USING (2) #14 x 3/4" SHEETMETAL SCREW SECURE THE FRONT EVAPORATOR MOUNTING BRACKET TO THE INNER COWL. SEE FIGURE 12.
- ☐ VERIFY THAT EVAPORATOR UNIT IS LEVEL AND SQUARE TO THE DASH, THEN TIGHTEN ALL MOUNTING BOLTS. (NOTE: TIGHTEN THE BOLT ON FIREWALL FIRST, THEN THE FRONT MOUNTING BRACKET SCREWS.)





CENTER LOUVER INSTALLATION

- ☐ REMOVE OEM CENTER LOUVER BLOCK-OFF PLATE.
- ☐ INSTALL (2) OEM CENTER LOUVERS.
- ☐ INSTALL (2) S-CLIPS ON CENTER LOUVER HOSE ADAPTER. SEE FIGURE 13 BELOW.
- ☐ INSTALL CENTER LOUVER HOSE ADAPTER ON CENTER LOUVER AS SHOWN BELOW.

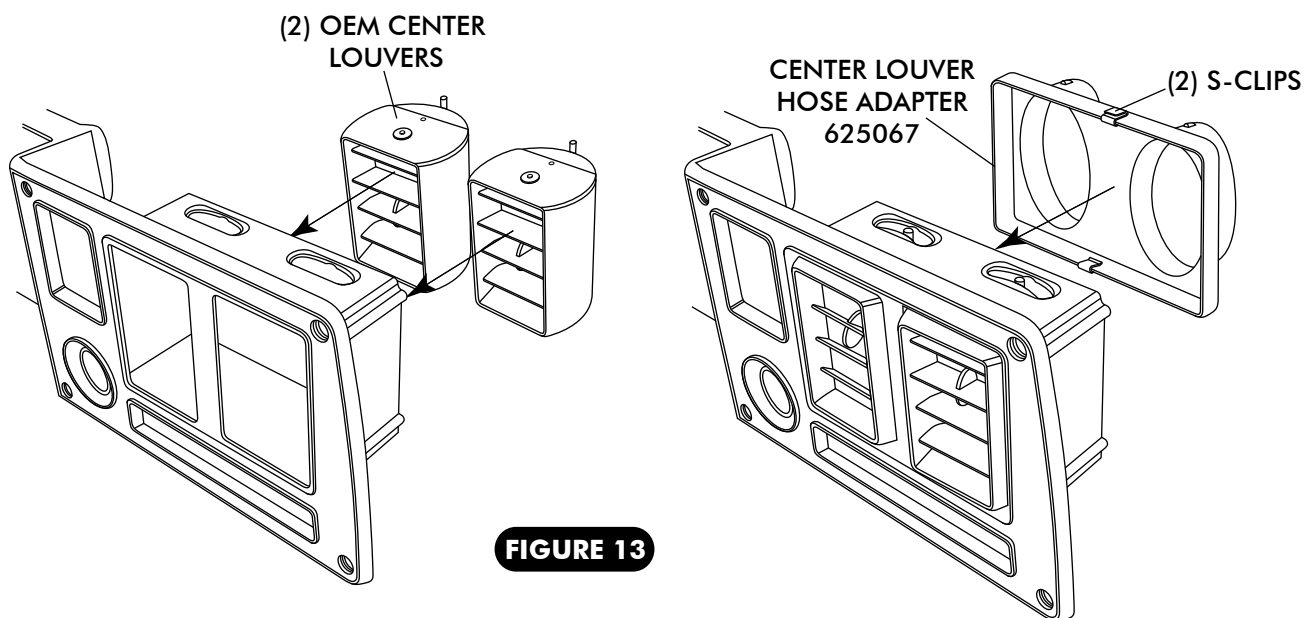


FIGURE 13

DRAIN HOSE INSTALLATION

- ☐ LOCATE EVAPORATOR DRAIN ON BOTTOM OF EVAPORATOR CASE
- ☐ IN-LINE WITH THE DRAIN, LIGHTLY MAKE A MARK ON THE FIREWALL. MEASURE ONE INCH DOWN AND DRILL A 5/8" HOLE THROUGH THE FIREWALL. SEE FIGURE 14.
- ☐ INSTALL DRAIN HOSE TO BOTTOM OF EVAPORATOR UNIT AND ROUTE THROUGH FIREWALL. SEE FIGURE 14.

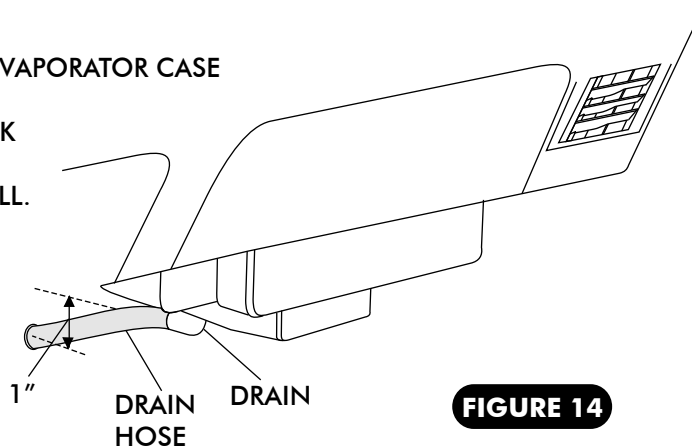


FIGURE 14



LUBRICATING O-RINGS

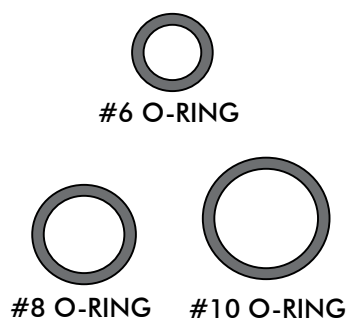
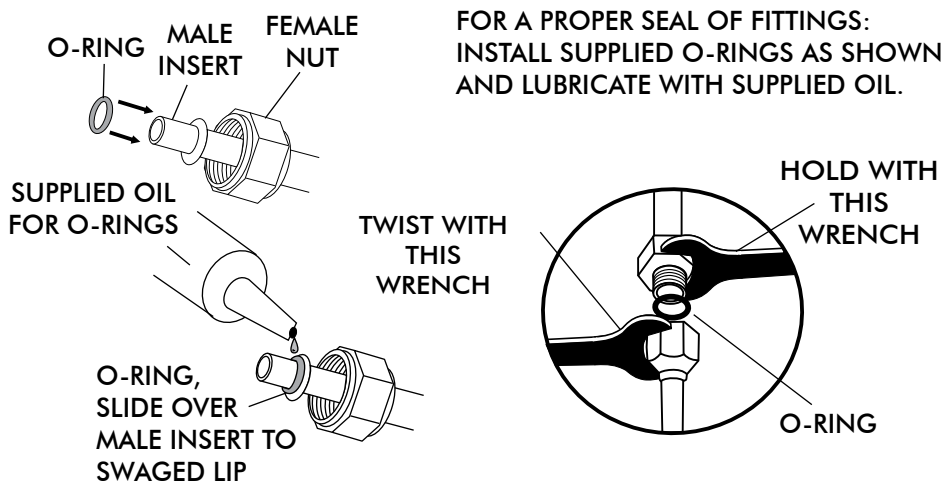


FIGURE 15



FOR A PROPER SEAL OF FITTINGS:
INSTALL SUPPLIED O-RINGS AS SHOWN
AND LUBRICATE WITH SUPPLIED OIL.

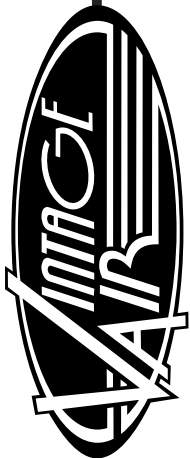
A/C HOSE INSTALLATION

STANDARD HOSE KIT

- ☐ LOCATE THE #8 COMPRESSOR A/C HOSE. LUBRICATE (2) #8 O-RINGS (SEE FIGURE 15, ABOVE) AND CONNECT THE 90° FEMALE FITTING w/ 134a SERVICE PORT TO THE #8 DISCHARGE PORT ON THE COMPRESSOR. ROUTE THE 45° FEMALE FITTING TO THE #8 CONDENSER HARDLINE COMING THROUGH CORE SUPPORT. SEE FIGURE 16 PAGE 16. TIGHTEN EACH FITTING CONNECTION AS SHOWN IN FIGURE 15 ABOVE.
- ☐ LOCATE THE #10 COMPRESSOR A/C HOSE. LUBRICATE (2) #10 O-RINGS (SEE FIGURE 15, ABOVE) AND CONNECT THE #10 135° FEMALE FITTING w/134a SERVICE PORT TO THE #10 SUCTION PORT ON THE COMPRESSOR. ROUTE THE 90° FEMALE FITTING TO THE #10 EVAPORATOR. SEE FIGURE 12a, PAGE 13 AND FIGURE 16 PAGE 16. TIGHTEN EACH FITTING CONNECTION AS SHOWN IN 15 ABOVE.
- ☐ LOCATE THE #6 EVAPORATOR A/C HOSE. LUBRICATE (2) #6 O-RINGS (SEE FIGURE 15, ABOVE) AND CONNECT THE 90° FEMALE FITTING TO THE #6 HARDLINE COMING THROUGH THE CORE SUPPORT FROM DRIER. ROUTE THE 90° FEMALE FITTING TO THE #6 EVAPORATOR. SEE FIGURE 12a, PAGE 13 AND FIGURE 16 PAGE 16. TIGHTEN EACH FITTING CONNECTION AS SHOWN IN FIGURE 15, ABOVE.

MODIFIED A/C HOSE KIT

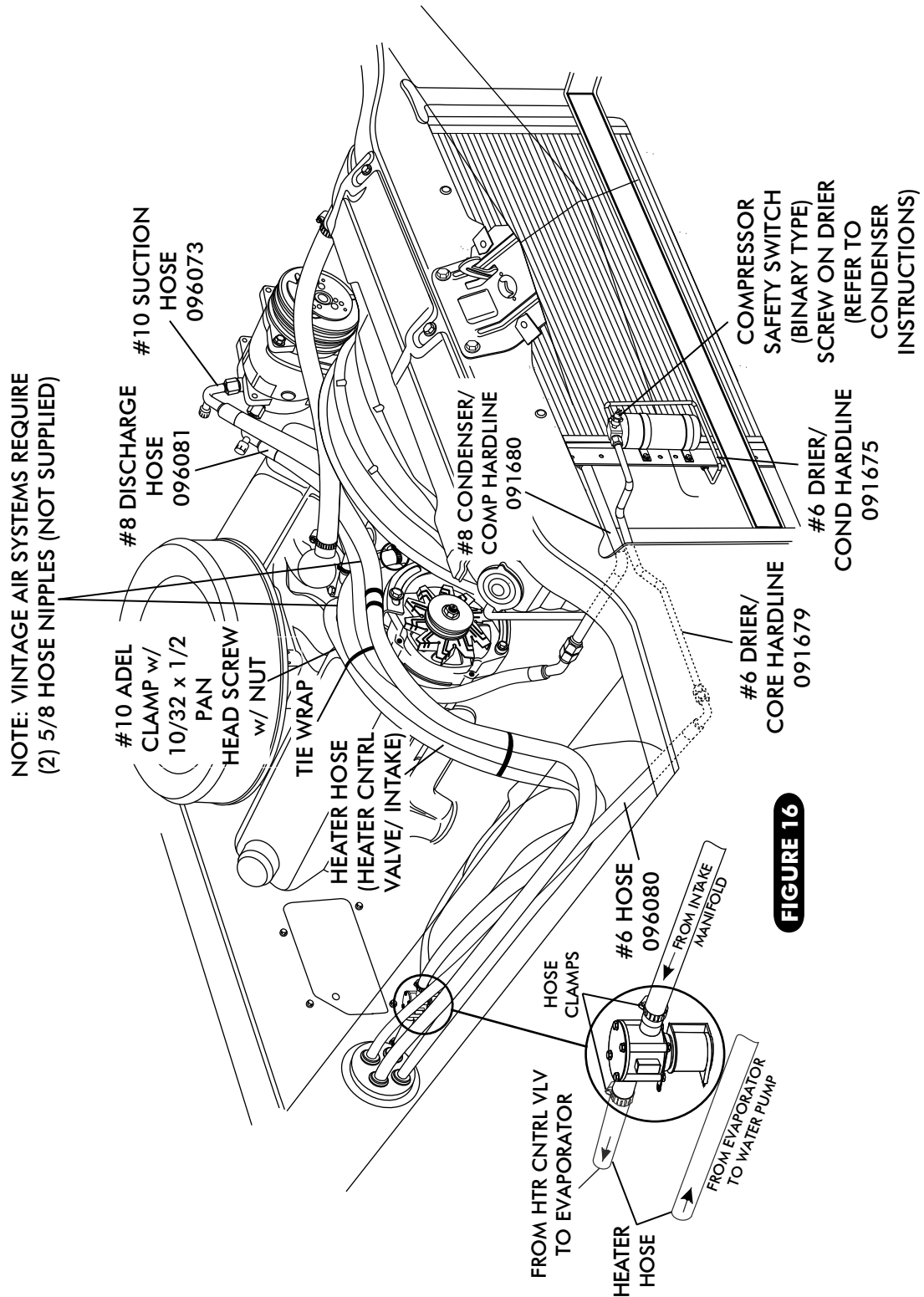
- ☐ REFER TO SEPARATE INSTRUCTIONS INCLUDED WITH MODIFIED HOSE KIT.



AC & HEATER HOSE ROUTING

HEATER HOSE & HEATER CONTROL VALVE INSTALLATION

- ☐ ROUTE A PIECE OF HEATER HOSE FROM THE WATER PUMP TO THE TOP HEATER FITTING OF HEATER CORE AS SHOWN IN FIGURE 12a PAGE 13 AND FIGURE 16 BELOW. SECURE USING HOSE CLAMPS.
- ☐ ROUTE A PIECE OF HEATER HOSE FROM THE INTAKE TO THE BOTTOM HEATER FITTING OF HEATER CORE AS SHOWN IN FIGURE 12a PAGE 13 AND FIGURE 16 BELOW. NOTE: INSTALL HEATER CONTROL VALVE IN-LINE WITH INTAKE MANIFOLD (PRESSURE SIDE) HEATER HOSE, SECURE USING HOSE CLAMPS AS SHOWN IN FIGURE 16, BELOW. **NOTE PROPER FLOW DIRECTION.**)





FINAL STEPS

- ☐ INSTALL DUCT HOSES AS SHOWN IN FIGURE 19, PAGE 18.
- ☐ INSTALL 3/8" ID GROMMET. SEE FIGURE 17.
- ☐ ROUTE A/C WIRES THROUGH 3/8 ID GROMMET AS SHOWN ON FIGURE 17 (12 VOLT/ GROUND/ BINARY SWITCH/ HEATER VALVE).
- ☐ INSTALL CONTROL PANEL ASM.
- ☐ PLUG THE WIRING HARNESS IN THE ECU MODULE ON SUB CASE AS SHOWN IN FIGURE 19, PAGE 18 (WIRE ACCORDING TO WIRING DIAGRAM ON PAGE 19 & 20.)
- ☐ INSTALL GLOVE BOX (SEE FIGURE 18)
- ☐ REINSTALL ALL PREVIOUSLY REMOVED ITEMS (BATTERY TRAY & BATTERY).
- ☐ FILL RADIATOR WITH AT LEAST A 50/50 MIXTURE OF APPROVED ANTIFREEZE AND DISTILLED WATER. IT IS THE OWNERS RESPONSIBILITY TO KEEP THE FREEZE PROTECTION AT THE PROPER LEVEL FOR THE CLIMATE IN WHICH THE VEHICLE IS OPERATED. FAILURE TO FOLLOW ANTIFREEZE RECOMMENDATIONS WILL CAUSE HEATER CORE TO CORRODE PREMATURELY AND POSSIBLY BURST IN AC MODE AND/ OR FREEZING WEATHER, VOIDING YOUR WARRANTY.
- ☐ DOUBLE CHECK ALL FITTING, BRACKETS AND BELTS FOR TIGHTNESS.
- ☐ VINTAGE AIR RECOMMENDS THAT ALL AC SYSTEMS BE SERVICED BY A CERTIFIED AUTOMOTIVE AIR CONDITIONING TECHNICIAN.
- ☐ EVACUATE THE SYSTEM FOR A MINIMUM OF 45 MINUTES PRIOR TO CHARGING AND LEAK CHECK PRIOR TO SERVICING.
- ☐ CHARGE THE SYSTEM TO THE CAPACITIES STATED ON THE INFORMATION PAGE (PAGE 4) OF THIS INSTRUCTION MANUAL.
- ☐ SEE OPERATION OF CONTROLS PROCEDURES PAGE 21.

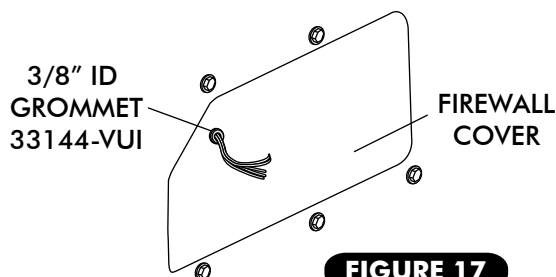


FIGURE 17

GLOVE BOX INSTALLATION

- ☐ INSTALL GLOVE BOX PROVIDED, SECURE WITH OEM SCREWS THROUGH OEM HOLES. SEE FIGURE 18.
- ☐ INSTALL GLOVE BOX DOOR.

NOTE: IF EQUIPPED WITH THE GLOVE BOX LIGHT AS SHOWN BELOW IN FIGURE 18a. MODIFY PLASTIC GLOVE BOX USING TEMPLATE PROVIDED ON PAGE 25.

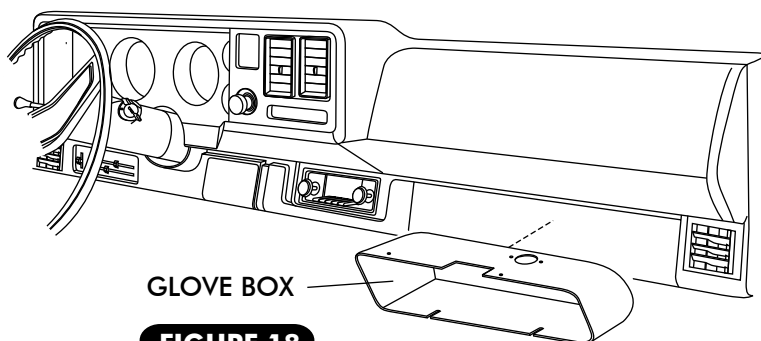


FIGURE 18

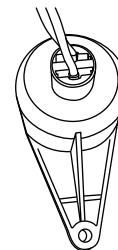
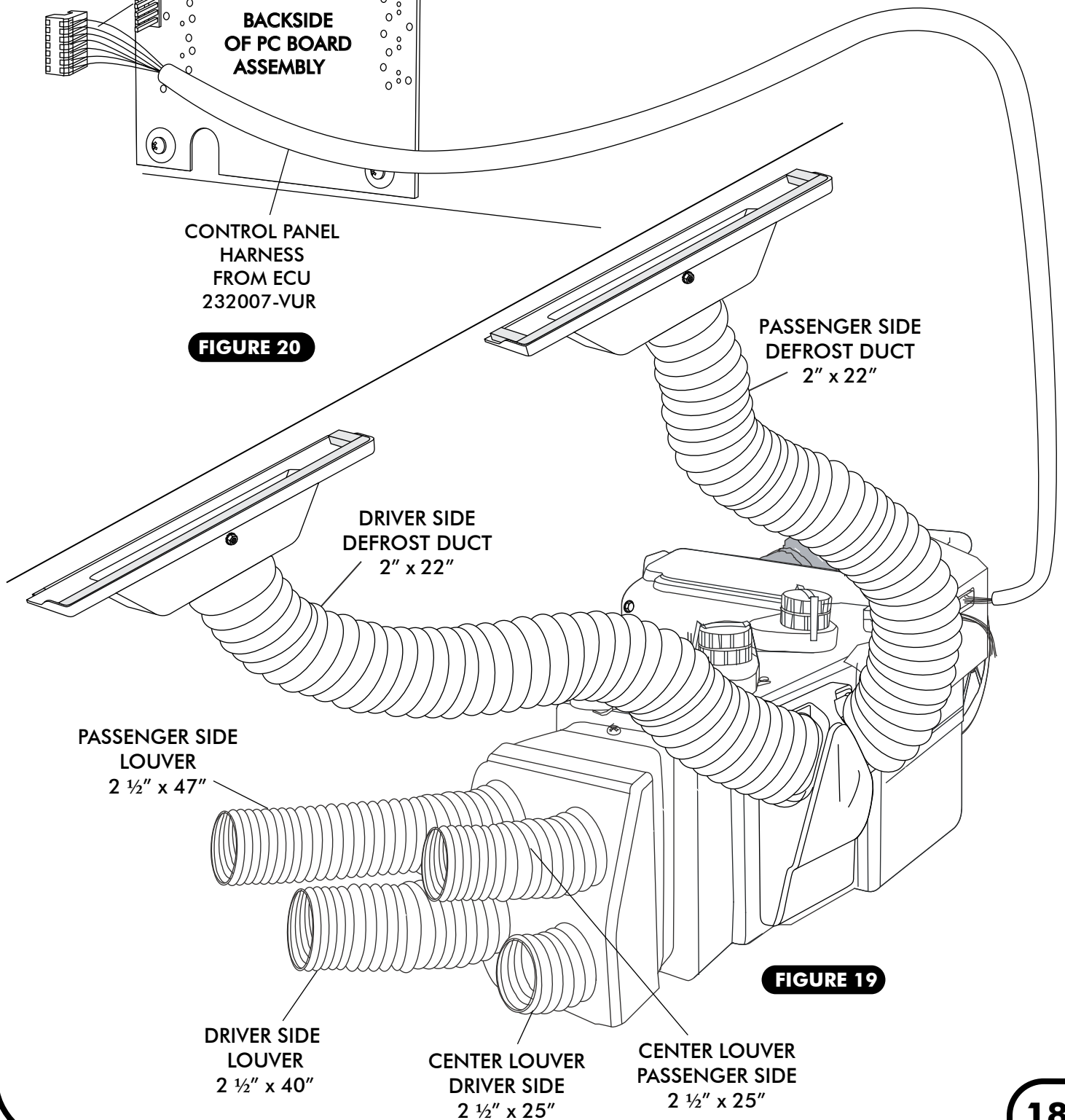
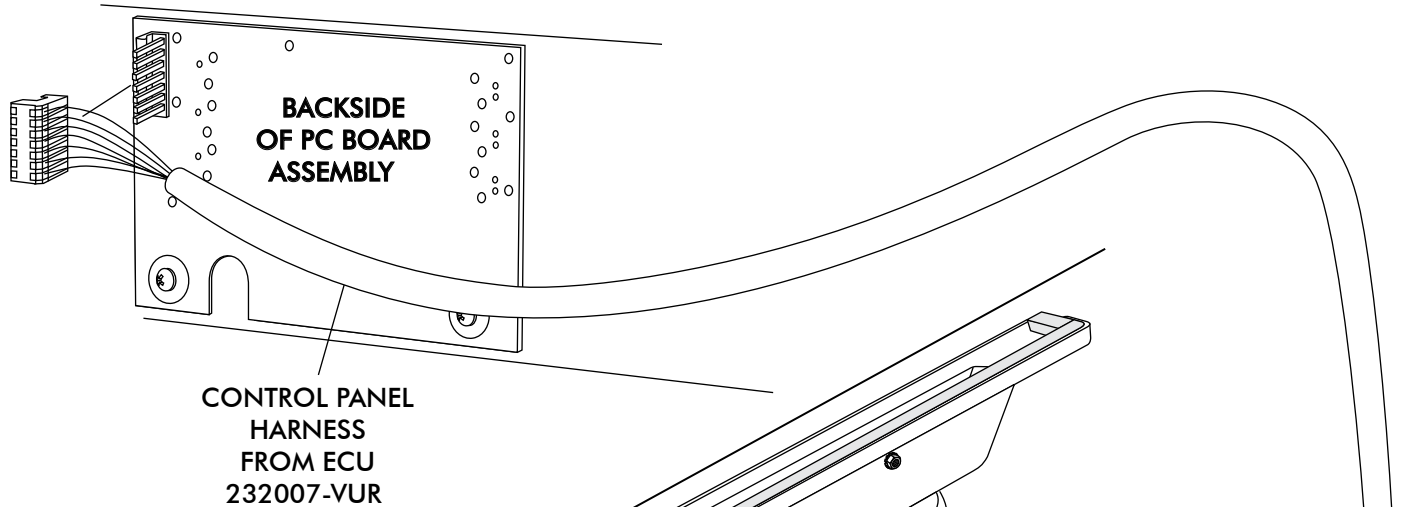


FIGURE 18a



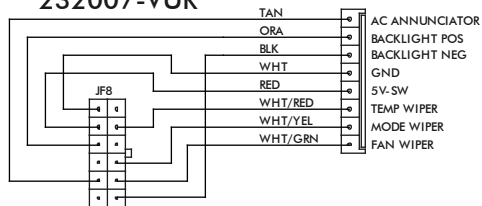
CONTROL PANEL & DUCT HOSE ROUTING



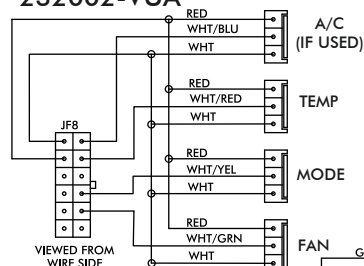


WIRING DIAGRAM

232007-VUR



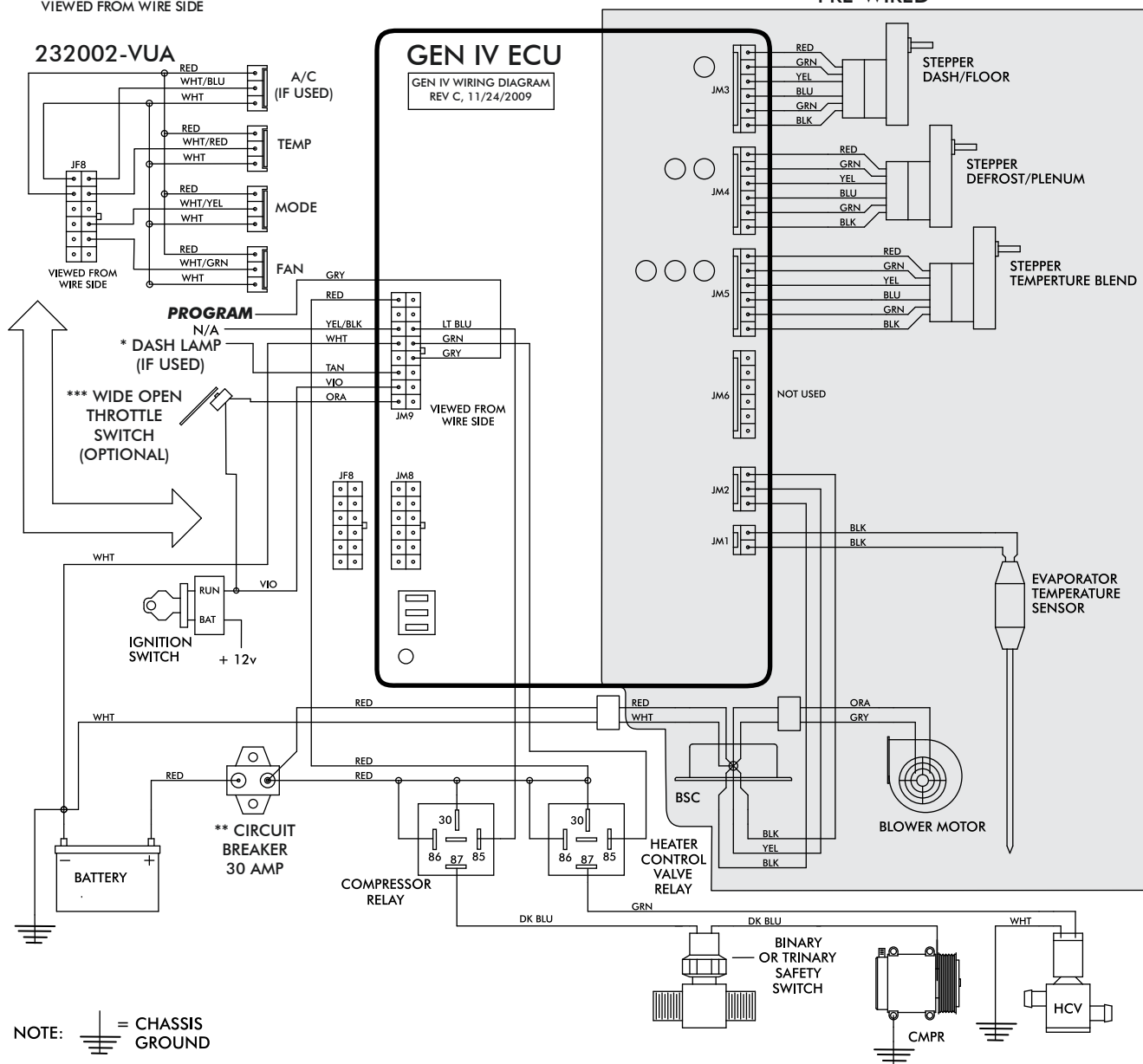
232002-VUA



GEN IV ECU

GEN IV WIRING DIAGRAM
REV C, 11/24/2009

PRE-WIRED



* DASH LAMP IS ONLY USED WITH TYPE 232007-VUR HARNESS

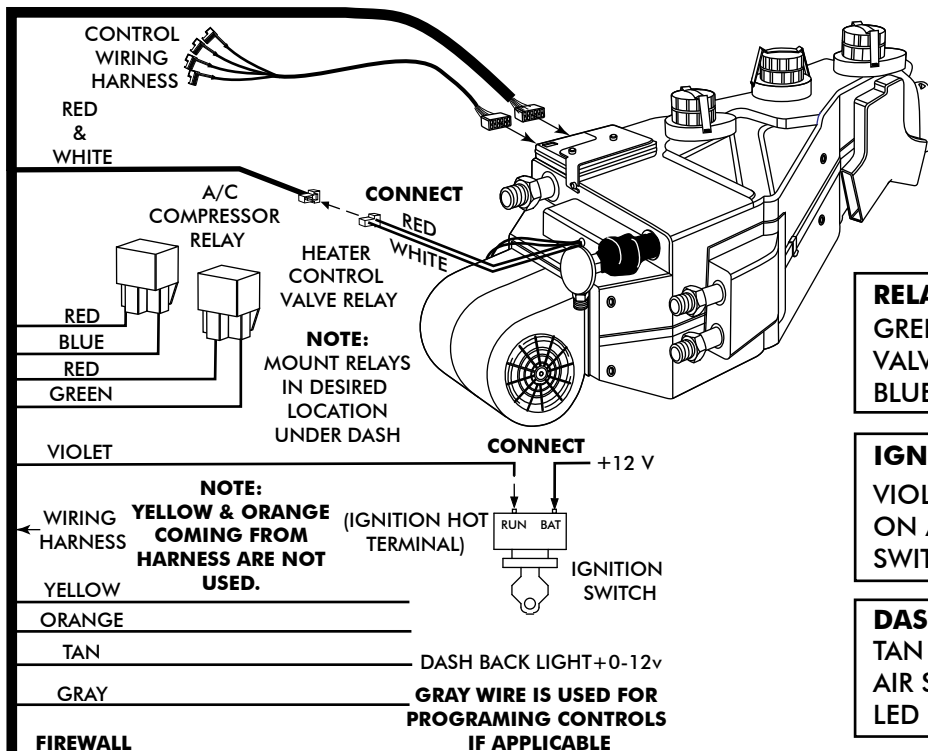
** WARNING: ALWAYS MOUNT CIRCUIT BREAKER UNDER THE HOOD IN THE ENGINE COMPARTMENT AND AS CLOSE TO THE BATTERY AS POSSIBLE.

*** WIDE OPEN THROTTLE SWITCH CONTACTS CLOSE ONLY AT FULL THROTTLE, WHICH DISABLES AC COMPRESSOR.



GEN IV WIRING CONNECTION INSTRUCTION

WIRING
HARNESS



RELAY:

GREEN WIRE IS HEATER CONTROL VALVE.
BLUE WIRE IS A/C COMPRESSOR.

IGNITION SWITCH:

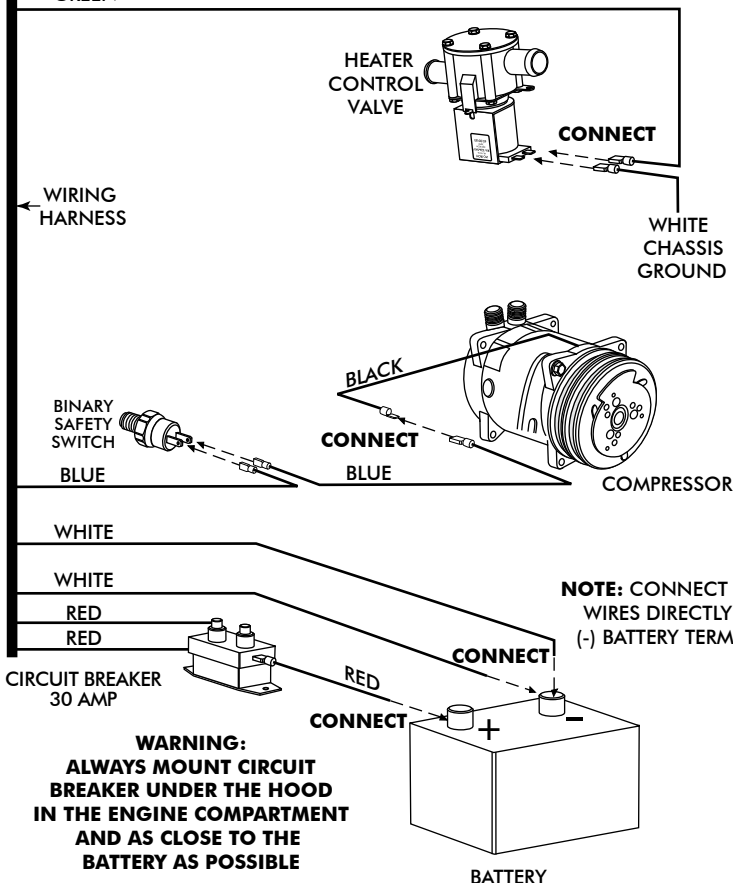
VIOLET 12v IGN SWITCH SOURCE (KEY ON ACCESSORY) POSITION MUST BE SWITCHED.

DASH LIGHT:

TAN WIRE USED ONLY WITH VINTAGE AIR SUPPLIED CONTROL PANEL WITH LED BACK LIGHT.

FIREWALL

GREEN



HEATER CONTROL VALVE:

INSTALL SOLENOID POINTING DOWN. NORMAL TO GET VERY HOT DURING OPERATION.
WHITE GROUND WIRE (NOT PART OF HARNESS) SUPPLIED IN KIT. NORMALLY OPEN VALVE MUST BE CONNECTED FOR PROPER SYSTEM OPERATION.

BINARY/ TRINARY & COMPRESSOR:

BINARY- CONNECT AS SHOWN TYPICAL COMPRESSOR WIRING. BE SURE COMPRESSOR BODY IS GROUNDED.
TRINARY SWITCH- CONNECT ACCORDING TO TRINARY SWITCH WIRING DIAGRAM

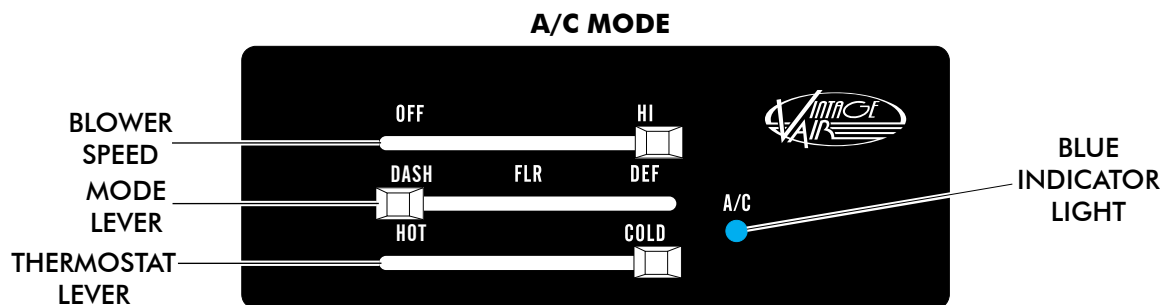
CIRCUIT BREAKER/ BATTERY:

WHITE **MUST** RUN TO (-) BATTERY. RED MAY RUN TO (+) BATTERY OR STARTER. MOUNT CIRCUIT BREAKER AS CLOSE TO BATTERY AS POSSIBLE.



OPERATION OF CONTROLS

NOTE: WHEN BATTERY POWER IS FIRST CONNECTED TO THE ECU, THE COMPUTER GOES THROUGH AN INITIALIZATION SEQUENCE. THIS INITIALIZATION MAY TAKE UP TO 30 SECONDS. A LOW BATTERY OR DISCONNECTING THE BATTERY MAY ALSO TRIGGER A RE-INITIALIZATION. DURING START UP, A LOW BATTERY MAY DROP BELOW 7 VOLTS, TRIGGERING RE-INITIALIZATION.

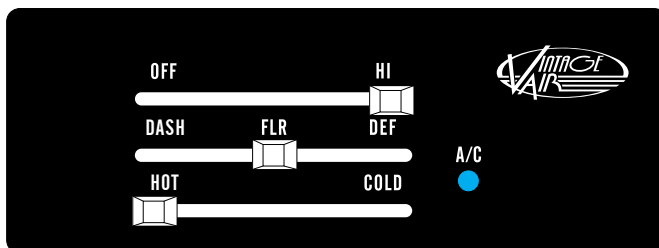


BLOWER SPEED
THIS LEVER CONTROLS THE BLOWER SPEED, FROM OFF TO HI

A/C THERMOSTAT LEVER
IN A/C MODE SLIDE THE THERMOSTAT LEVER ALL THE WAY RIGHT TO THE COLD POSITION, FOR MAXIMUM COOLING. BLUE AC INDICATOR LIGHT COME ON ONLY WHEN AC COMPRESSOR IS ENGAGED (SLIDE LEVER LEFT OR RIGHT TO ADJUST DESIRED TEMPERATURE)

MODE LEVER
SLIDE THE LEVER TO THE DASH POSITION

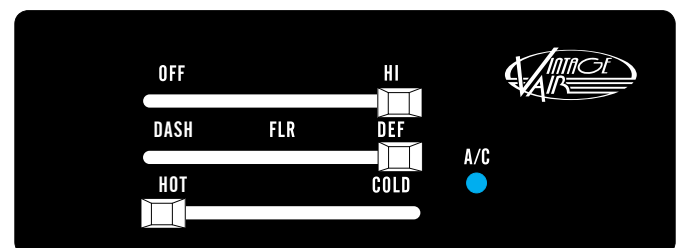
HEAT MODE



A/C THERMOSTAT LEVER
IN HEAT MODE SLIDE THE THERMOSTAT LEVER ALL THE WAY TO THE LEFT TO THE HOT POSITION, FOR MAXIMUM HEATING. (SLIDE LEVER LEFT OR RIGHT TO ADJUST DESIRED TEMPERATURE)

MODE LEVER
SLIDE THE LEVER TO THE FLR POSITION (SLIDE THE LEVER TO THE LEFT OR RIGHT, TO ADJUST DESIRED DASH/ FLR/ DEF LOCATION)

DEFROST MODE



A/C THERMOSTAT LEVER
IN DEF MODE SLIDE THE THERMOSTAT LEVER ALL THE WAY TO THE LEFT TO THE HOT POSITION, FOR MAXIMUM HEATING. (SLIDE LEVER LEFT OR RIGHT TO ADJUST DESIRED TEMPERATURE)

MODE LEVER
SLIDE THE LEVER TO THE DEF POSITION



TRUBLE SHOOTING INFORMATION

SYMPTOM	CONDITION	CHECKS	ACTIONS	NOTES
1. BLOWER STAYS ON HIGH SPEED WHEN IGNITION IS ON	NO OTHER FUNCTIONS WORK	CHECK FOR DAMAGED PINS OR WIRES IN CONTROL HEAD PLUG.	VERIFY ALL PINS ARE INSERTED INTO PLUG. INSURE NO PINS ARE BENT OR DAMAGED IN ECU.	
		CHECK FOR DAMAGED GROUND WIRE (WHITE) IN CONTROL HEAD HARNESS.	VERIFY CONTINUITY TO CHASSIS GROUND WITH WHITE CONTROL HEAD WIRE AT VARIOUS POINTS	LOSS OF GROUND ON THIS WIRE RENDER CONTROL HEAD IN OPERABLE
	ALL OTHER FUNCTIONS WORK	CHECK FOR DAMAGED BLOWER SWITCH OR POT AND ASSOCIATED WIRING.		SEE BLOWER SWITCH CHECK PROCEDURE
BLOWER STAYS ON HIGH SPEED WHEN IGNITION IS ON OR OFF		UNPLUG 3 WIRE BSC CONTROL CONNECTOR FROM ECU. IF BLOWER SHUTS OFF, ECU IS EITHER IMPROPERLY WIRED, OR DAMAGED.	BE SURE SMALL, 20 GA WHITE GROUND WIRE IS CONNECTED TO THE BATTERY GROUND POST. IF IT IS, REPLACE ECU.	
		UNPLUG 3 WIRE BSC CONTROL CONNECTOR FROM ECU. IF BLOWER STAYS RUNNING, THE BSC IS EITHER IMPROPERLY WIRED, OR DAMAGED.	CHECK TO INSURE THAT NO BSC WIRING IS DAMAGED OR SHORTED TO VEHICLE GROUND. THE BSC OPERATES THE BLOWER BY GROUND SIDE PWM SWITCHING. THE POSITIVE WIRE TO THE BLOWER WILL ALWAYS BE HOT. IF THE "GROUND" SIDE OF THE BLOWER IS SHORTED TO CHASSIS GROUND, THE BLOWER WILL RUN ON HI.	
			REPLACE BSC. (THIS WILL REQUIRE EVAPORATOR TO BE REMOVED FROM VEHICLE.)	NO OTHER PART REPLACEMENTS SHOULD BE NECESSARY

2. COMPRESSOR WILL NOT TURN ON (ALL OTHER FUNCTIONS WORK)	SYSTEM IS NOT CHARGED	SYSTEM MUST BE CHARGED FOR COMP TO ENGAGE	CHARGE SYSTEM OR BYPASS PRESSURE SWITCH.	DANGER- NEVER BYPASS SAFETY SWITCH WITH ENGINE RUNNING, SERIOUS INJURY CAN RESULT.
		CHECK FOR FAULTY A/C POT OR ASSOC. WIRING (NOT APPLICABLE TO 3 POT CONTROLS)	CHECK CONTINUITY TO GROUND ON WHITE CONTROL HEAD WIRE. CHECK FOR 5V ON RED CONTROL HEAD WIRE.	TO CHECK FOR PROPER POT FUNCTION, CHECK VOLTAGE AT WHITE/ BLUE WIRE. VOLTAGE SHOULD BE BETWEEN 0 AND 5V, AND WILL VARY WITH POT LEVER POSITION.
		CHECK FOR DISCONNECTED OR FAULTY THERMISTOR.	CHECK TWO PIN CONNECTOR AT ECU HOUSING	DISCONNECTED OR FAULTY THERMISTOR WILL CAUSE COMPRESSOR TO BE DISABLED.

3. COMPRESSOR WILL NOT TURN OFF (ALL OTHER FUNCTIONS WORK)		CHECK FOR FAULTY A/C POT OR ASSOC. WIRING	REPAIR/REPLACE POT/ CONTROL WIRING	RED WIRE @ A/C POT SHOULD HAVE APPROX. 5V WITH IGNITION ON. WHITE WIRE WILL HAVE CONTINUITY TO CHASSIS GROUND, WHITE/ BLUE WIRE SHOULD VARY BETWEEN 0V AND 5V WHEN LEVER IS MOVED UP AND DOWN.
		CHECK FOR FAULTY A/C RELAY	REPLACE RELAY	



TROUBLE SHOOTING INFORMATION CONT.

4. SYSTEM WILL NOT TURN ON OR RUNS INTERMITTENTLY	WORKS WHEN ENGINE IS NOT RUNNING. SHUTS OFF WHEN ENGINE IS STARTED. (TYPICALLY EARLY GEN 4, BUT POSSIBLE ON ALL VERSIONS)	NOISE INTERFERENCE FROM EITHER IGNITION OR ALTERNATOR	INSTALL CAPACITORS ON IGN. COIL, AND ALTERNATOR. ENSURE GOOD GROUND AT ALL POINTS. RELOCATE COIL AND ASSOCIATED WIRING AWAY FROM ECU AND ECU WIRING. CHECK FOR BURNED OR LOOSE PLUG WIRES.	IGNITION NOISE (RADIATED OR CONDUCTED) WILL CAUSE THE SYSTEM TO SHUT DOWN DUE TO HIGH VOLTAGE SPIKES. IF THIS IS SUSPECTED, CHECK WITH A QUALITY OSCILLOSCOPE. SPIKES GREATER THAN 16V WILL SHUT DOWN ECU. INSTALL A RADIO CAPACITOR AT THE POSITIVE POST OF THE IGNITION COIL (SEE RADIO CAPACITOR INSTALLATION BULLETIN). A FAULTY ALTERNATOR OR WORN OUT BATTERY CAN ALSO RESULT IN THIS CONDITION FOR ALTERNATOR REGULATOR TO FUNCTION PROPERLY.
	WILL NOT TURN ON UNDER ANY CONDITIONS	VERIFY CONNECTIONS ON POWER LEAD, IGNITION LEAD, AND BOTH WHITE GROUND WIRES	CHECK FOR POSITIVE POWER AT HEATER VALVE GREEN WIRE. AND BLOWER RED WIRE. CHECK FOR GROUND ON CONTROL HEAD WHITE WIRE	
		VERIFY BATTERY VOLTAGE IS GREATER THAN 10 VOLTS AND LESS THAN 16.	VERIFY PROPER METER FUNCTION BY CHECKING A KNOWN GOOD BATTERY'S VOLTAGE.	

5. LOSS OF MODE DOOR FUNCTION	NO MODE CHANGE AT ALL	CHECK FOR DAMAGED MODE SWITCH OR POT AND ASSOCIATED WIRING		
	PARTIAL FUNCTION OF MODE DOORS	CHECK FOR OBSTRUCTED OR BINDING MODE DOORS		TYPICALLY CAUSED BY EVAPORATOR HOUSING INSTALLED IN A BLIND IN THE VEHICLE. BE SURE ALL MOUNTING LOCATIONS LINE UP AND DON'T HAVE TO BE FORCED INTO POSITION.
		CHECK FOR DAMAGED STEPPER MOTOR OR WIRING		

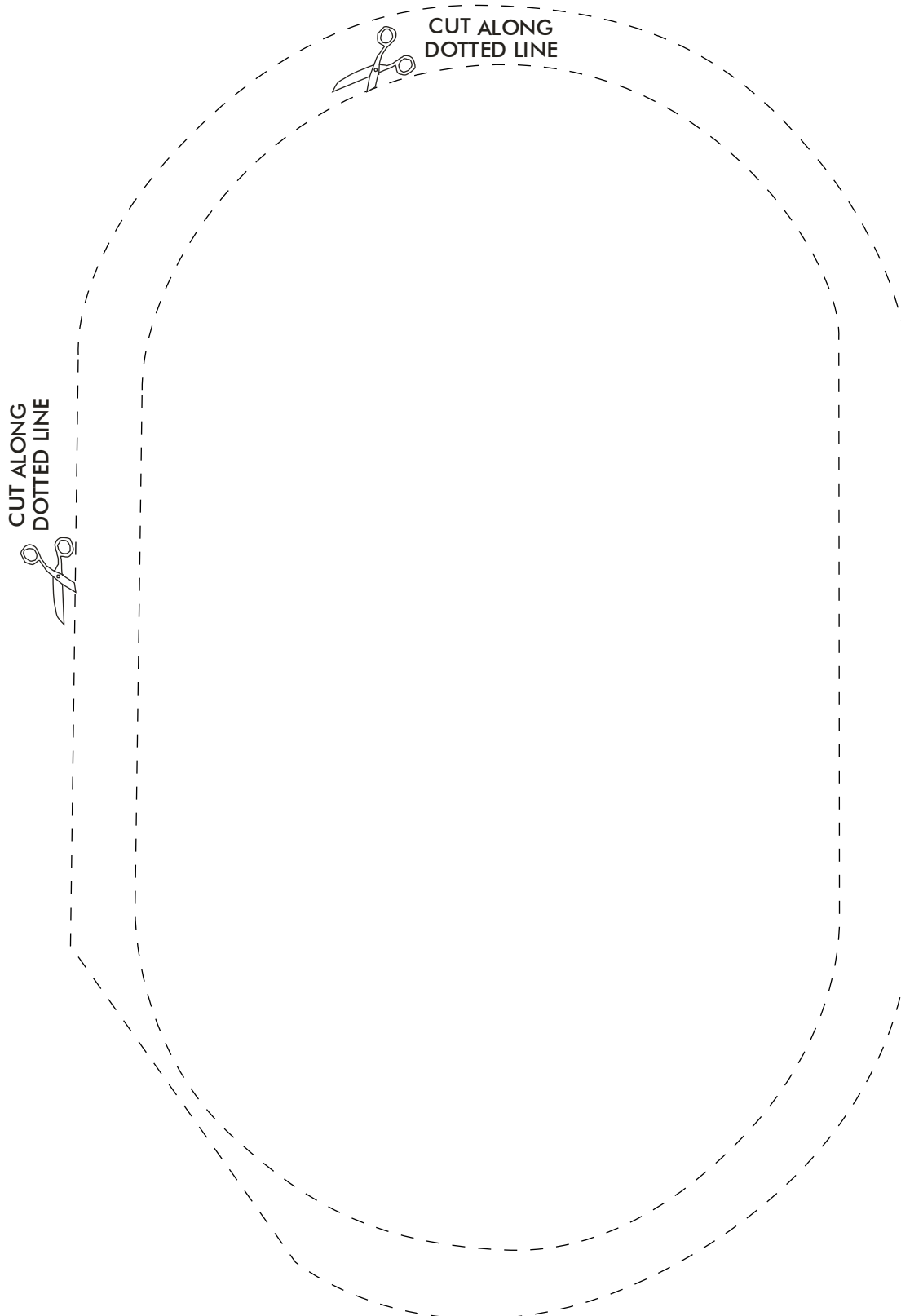
6. BLOWER TURNS ON AND OFF RAPIDLY	BATTERY VOLTAGE IS AT LEAST 12V.	CHECK FOR AT LEAST 12V BETWEEN GREEN HEATER VALVE WIRE AND CHASSIS GROUND.	INSURE ALL SYSTEM GROUNDS AND POWER CONNECTION ARE CLEAN AND TIGHT.	
	BATTERY VOLTAGES IS LESS THAN 12V	CHECK FOR FAULTY BATTERY OR ALTERNATOR	CHARGE BATTERY	SYSTEM SHUTS OFF BLOWER AT 10V. POOR CONNECTIONS OR WEAK BATTERY CAN CAUSE SHUT DOWN AT UP TO 11V

7. ERATIC FUNCTIONS OF BLOWER, MODE , TEMP ETC.		CHECK FOR DAMAGED SWITCH OR POT AND ASSOCIATED WIRING	REPAIR OR REPLACE	
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8. WHEN THE IGNITION IS TURNED ON, THE BLOWER MOMENTARILY COMES ON, THEN SHUTS OFF. THIS IS WITH THE BLOWER SWITCH IN THE OFF POSITION		THIS IS AN INDICATOR THAT THE SYSTEM HAS BEEN RESET. BE SURE THE RED POWER WIRE IS ON THE BATTERY POST AND NOT ON A SWITCHED SOURCE. ALSO, IF THE SYSTEM IS PULLED BELOW 7V EVEN FOR A SPLIT SECOND, THE SYSTEM WILL RESET.	RUN RED POWER WIRE DIRECTLY TO BATTERY	
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KICK PANEL MODIFICATION TEMPLATE





GLOVE BOX LIGHT TEMPLATE

TEMPLATE

